

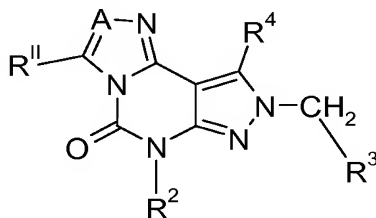
Application No.: 10/567,797
 Reply to Office Action of: 03/22/2007
 Amendment Dated: 04/23/2007

In the Claims

The listing of claims will replace all prior versions and listings of claims in the application.

Listing of claims

1. (Currently amended) A compound having the structural formula (I):



(I)

wherein,

A is N or CR^I;

R^I is, independently at each instance, H, halogen, cyano, nitro, ~~optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted alkoxy, optionally substituted amino, optionally substituted carboxy, optionally substituted alkylcarbonyl, optionally substituted alkylcarbamide, optionally substituted alkylsulfide, optionally substituted alkylsulphone, optionally substituted alkylsulfoxide, optionally substituted sulphamide;~~

R^{II} is, independently at each instance, H, halogen, cyano, nitro, ~~optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted alkoxy, optionally substituted amino, optionally substituted carboxy, optionally substituted alkylcarbonyl, optionally substituted alkylcarbamide, optionally substituted alkylsulfide, optionally substituted alkylsulphone, optionally substituted sulfoxide, optionally substituted sulphamide;~~

R² is H, ~~optionally substituted alkyl, wherein said alkyl is optionally substituted with 0, 1, 2 or 3 substituents selected from heterocycle, S(=O)_nR^c, -S(=O)_nNR^aR^a halogen, -CN, -OR^a, -NR^aR^a, -C(=O)OR^a, -C(=O)R^a, -C(=O)NR^aR^a, -OC(=O)C₁₋₄alkyl, or -NR^aC(=O)C₁₋₄alkyl, optionally substituted alkylcycloalkyl, wherein said alkylcycloalkyl is optionally substituted with 0, 1, 2 or 3 substituents selected from heterocycle, S(=O)_nR^c, -S(=O)_nNR^aR^a halogen, -CN, -OR^a, -NR^aR^a, -C(=O)OR^a, -C(=O)R^a, -C(=O)NR^aR^a, -OC(=O)C₁₋₄alkyl, or -NR^aC(=O)C₁₋₄alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted cycloalkenyl, optionally~~

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~~substituted~~ cycloalkynyl, ~~optionally substituted~~ aryl, ~~optionally substituted~~ alkoxy, ~~optionally substituted~~ amino, or ~~optionally substituted~~ heterocycle;

R^3 is a monocyclic or bicyclic, saturated or unsaturated, ring system comprising 0, 1, 2 or 3 heteroatoms independently selected from N, O, or S, the ring being substituted by 0, 1, 2 or 3 substituents selected from =O, halogen, $-OR^a$, C_{1-6} alkyl, C_{1-6} haloalkyl, -CN, nitro, $-S(=O)_nR^c$, $-O(CH_2)_mHet$, $-O(CH_2)_mC(=O)Het$, $-O(CH_2)_mC(=O)NR^aR^a$, $-O(CH_2)_mC(=O)OR^a$, $-O(CH_2)_mNR^aR^a$, $-O(CH_2)_mOR^a$, $-S(CH_2)_mHet$, $-S(CH_2)_mC(=O)Het$, $-S(CH_2)_mC(=O)NR^aR^a$, $-S(CH_2)_mC(=O)OR^a$, $-S(CH_2)_mNR^aR^a$, $-S(CH_2)_mOR^a$, $-NR^aR^a$, $-NHC(=O)R^a$, $N=NR^a$, aminocarbonyl, phenyl, benzyl; or R^3 is represented by -Het, -Het-Het, R^5 , $-R^5-Het$, $-Het-R^5$, $-Het-O-R^5$, $-R^5-R^5$, $-R^5-OR^5$;

R^4 is a monocyclic or bicyclic, saturated or unsaturated, ring system, or a vicinal-fused derivative thereof, which may contain from 5 to 12, ~~preferably 5 to 10~~, ring atoms, 0, 1, 2, 3 or 4 of which are heteroatoms independently selected from N, O, or S, the ring system being substituted by 0, 1, 2 or 3 substituents selected from $B(OH)_2$, vicinal $-OCH_2CH_2O-$, vicinal $-OC_{1-2}haloalkylo-$, vicinal $-OCH_2O-$, vicinal $-CH_2OCH_2O-$, =O, halogen, $-R^bOR^a$, $-SR^a$, $-OR^a$, C_{1-6} alkyl, C_{1-6} haloalkyl, -CN, $-S(=O)_nR^c$, $-O(CH_2)_mHet$, $-O(CH_2)_mC(=O)Het$, $-O(CH_2)_mC(=O)NR^aR^a$, $-O(CH_2)_mC(=O)OR^a$, $-O(CH_2)_mNR^aR^a$, $-O(CH_2)_mOR^a$, $-S(CH_2)_mHet$, $-S(CH_2)_mC(=O)Het$, $-S(CH_2)_mC(=O)NR^aR^a$, $-S(CH_2)_mC(=O)OR^a$, $-S(CH_2)_mNR^aR^a$, $-S(CH_2)_mOR^a$, $-NR^aR^a$, $-NHC(=O)R^a$, $-NHC(=O)OR^a$, $N=NR^a$, NO_2 , $-C(=O)NR^aR^a$, $-C(=O)NR^aOR^a$, $-C(=O)NR^a(R^bNR^aR^a)$, $-C(=O)NR^a(R^bOR^a)$, $-C(=O)NR^a(R^bS(=O)_nR^a)$, $-C(=O)NR^a(R^bHet)$, $-C(=O)OR^a$, $-OC(=O)R^a$, $-C(=O)OR^bNR^aR^a$, $-C(=O)R^a$, $-C(=O)R^bNR^aR^a$, $-C(=NOR^a)R^a$, $-C(=NCN)R^a$, $-S(=O)_2NR^aR^a$, $-NR^aS(=O)_2R^a$, $-S(=O)_2NR^a(R^bC(=O)NR^aR^a)$, $-S(=O)_2NR^a(R^bC(=O)OR^a)$, aminocarbonyl, phenyl, benzyl; or R^4 is represented by $-(CH_2)_nR^5$, $-Het$, $-(CH_2)_nR^d$, -Het, -Het-Het, R^5 , $-R^5-Het$, $-Het-R^5$, $-Het-OR^5$, R^5-R^5 , or $-R^5-OR^5$; or R^4 is represented by C_{1-6} alkyl, $-NC_{1-6}$ alkyl, or $-N(C_{1-6}alkyl)_2$ wherein the C_{1-6} alkyl, $-NC_{1-6}$ alkyl, $-N(C_{1-6}alkyl)$ are substituted by 0, 1 or 2 substituents selected from R^a , OR^a , halogen or phenyl wherein R^4 is not $-(CH_2)_zCH_3$, $-(CH_2)_zCH_2OH$, $-(CH_2)_zCO_2H$, or $-(CH_2)_zCO_2C_{1-6}alkyl$ wherein z is 1,2,3,4,5, or 6;

R^5 is independently at each instance, phenyl substituted by 0, 1, 2, or 3 groups selected from halogen, C_{1-6} haloalkyl, $-OC_{1-6}haloalkyl$, C_{1-6} alkyl, -CN, nitro, $-OR^a$, $-S(=O)_nR^c$, $-O(CH_2)_mHet$, $-O(CH_2)_mC(=O)Het$, $-O(CH_2)_mC(=O)NR^aR^a$, $-O(CH_2)_mC(=O)OR^a$, $-O(CH_2)_mNR^aR^a$, $-O(CH_2)_mOR^a$, $-S(CH_2)_mHet$, $-S(CH_2)_mC(=O)Het$, $-S(CH_2)_mC(=O)NR^aR^a$, $-S(CH_2)_mC(=O)OR^a$, $-S(CH_2)_mNR^aR^a$, $-S(CH_2)_mOR^a$, $-R^bOR^a$, $-SR^a$, $-C(=O)NR^aR^a$, $-C(=O)NR^aOR^a$, $-C(=O)NR^aR^bNR^aR^a$, $-C(=O)NR^aR^bOR^a$, $-C(=O)NR^aR^bS(=O)_nR^a$, $-C(=O)NR^aR^bHet$, $-C(=O)OR^a$, $-OC(=O)R^a$, $-C(=O)OR^bNR^aR^a$, $-C(=O)R^a$, $-C(=O)R^bNR^aR^a$, -

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$C(=NOR^a)R^a$, $-C(=NCN)R^a$, $-S(=O)_2NR^aR^a$, $-NR^aS(=O)_2R^a$, $-S(=O)_2NR^aR^bC(=O)NR^aR^a$, or $-S(=O)_2NR^aR^bC(=O)OR^a$;

R^a is, independently at each instance, H, C_{1-6} alkyl, $-C(=O)C_{1-4}$ alkyl, C_{1-4} haloalkyl, phenyl, benzyl, or 5 or 6-membered ring, saturated or unsaturated heterocycle containing 1,2,3, or 4 heteroatoms independently selected from N, O or S;

R^b is, independently at each instance, C_{1-6} alkyl, $-C(=O)C_{1-4}$ alkyl, C_{1-4} haloalkyl, phenyl, benzyl, or 5 or 6-membered ring, saturated or unsaturated heterocycle containing 1,2,3, or 4 heteroatoms independently selected from N, O or S;

R^c is C_{1-6} alkyl, C_{1-4} haloalkyl, phenyl or benzyl;

R^d is phenyl substituted by 0, 1 or 2 groups selected from -CN, halogen, nitro, C_{1-6} alkyl, C_{1-4} haloalkyl, -OH, $-OR^c$, $-NR^aR^a$, $-S(=O)_nR^c$, $-C(=O)NR^aR^a$, $-C(=O)OR^a$, $-NR^aC(=O)R^a$, $-OC(=O)R^a$, $B(OH)_2$, vicinyl $-OCH_2CH_2O-$, vicinyl $-OC_{1-2}$ haloalkylO-, vicinyl $-OCH_2O-$, vicinyl $-CH_2OCH_2O-$, phenyl, benzyl and a 5- or 6-membered ring, saturated or unsaturated heterocycle containing 1, 2, 3 or 4 heteroatoms independently selected from N, O, or S;

m is 1, 2 or 3;

n is 0, 1 or 2;

or a pharmaceutically acceptable salt thereof.

2. (Original) A compound as recited in Claim 1 wherein:

A is N or CR^{20} wherein R^{20} is H, halogen, cyano, C_{1-6} alkyl, C_{1-6} alkenyl, C_{1-6} alkynyl, $-OC_{0-4}$ alkyl, and $-N(C_{0-4}alkyl)(C_{0-4}alkyl)$.

3. (Original) A compound as recited in Claim 1 wherein:

R^I is H, halogen, cyano, nitro, C_{1-6} alkyl, C_{1-6} alkenyl, C_{1-6} alkynyl, $S(=O)_n C_{1-4}alkyl$, $-S(=O)_n N(C_{1-4}alkyl)_n$, $-OC_{0-4}alkyl$, $-N(C_{0-4}alkyl)(C_{0-4}alkyl)$, $-C(=O)OC_{1-4}alkyl$, $-C(=O)C_{0-4}alkyl$, or $-C(=O)N(C_{0-4}alkyl)(C_{0-4}alkyl)$ where n is 0, 1 or 2.

4. (Original) A compound as recited in Claim 1 wherein:

R^{II} is H, halogen, cyano, nitro, C_{1-6} alkyl, C_{1-6} alkenyl, C_{1-6} alkynyl, $S(=O)_n C_{1-4}alkyl$, $-S(=O)_n N(C_{1-4}alkyl)_n$, $-OC_{1-4}alkyl$, $-N(C_{0-4}alkyl)(C_{0-4}alkyl)$, $-C(=O)OC_{1-4}alkyl$, $-C(=O)C_{0-4}alkyl$, or $-C(=O)N(C_{0-4}alkyl)(C_{0-4}alkyl)$ where n is 0, 1 or 2.

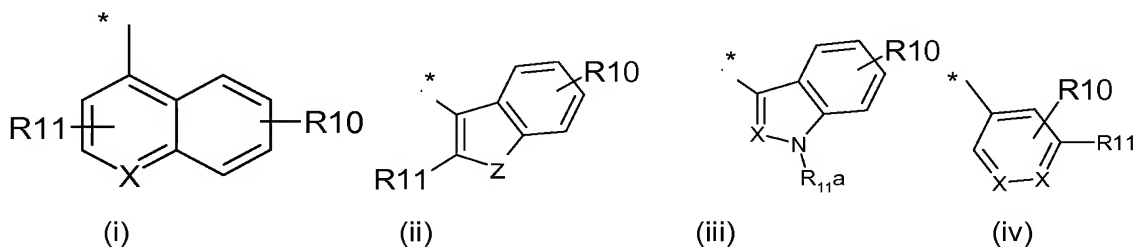
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5. (Cancelled) A compound as recited in Claim 1 wherein:

R^2 is C_{1-6} alkyl C_{3-6} cycloalkyl or $-C_{1-6}$ alkyl wherein either is optionally substituted with 0, 1, 2 or 3 substituents selected from Het, $S(=O)_nR^c$, $-S(=O)_nNR^aR^a$ halogen, $-CN$, $-OR^a$, $-NR^aR^a$, $-C(=O)OR^a$, $-C(=O)R^a$, $-C(=O)NR^aR^a$, $-OC(=O)C_{1-4}$ alkyl, or $-NR^aC(=O)C_{1-4}$ alkyl and n is 0, 1 or 2.

6. (Original) A compound as recited in Claim 1 wherein:

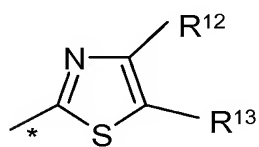
R^3 is selected from formulas (i), (ii), (iii) or (iv) set forth below:



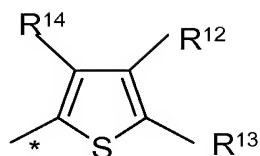
wherein * is the location where (i) or (ii) or (iii) or (iv) is attached to structural formula (I), and X is C or N; and Z is O or S, wherein R^{10} is at any position on the ring and R^{10} and R^{11} are independently at each instance H, R^a , halogen, $-CN$, nitro, OR^a , CF_3 , $-NR^aR^a$, $-C(=O)OR^a$, $-C(=O)R^a$, $-C(=O)NR^aR^a$, $-OC(=O)C_{1-4}$ alkyl, $-NR^aC(=O)C_{1-4}$ alkyl or $-S(=O)_nR^c$; and wherein R^{11a} is R^a , $-S(=O)_2NR^aR^a$ or $-S(=O)_nR^c$ and $n=1$ or 2.

7. (Original) A compound as recited in Claim 1 wherein:

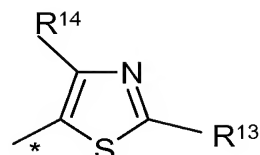
R^4 is selected from formulas (a) to (z) or (aa) or (ab) set forth below:



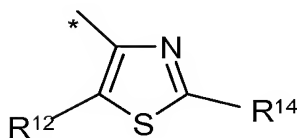
(a)



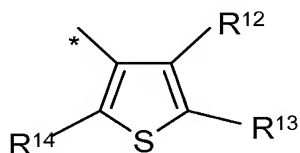
(b)



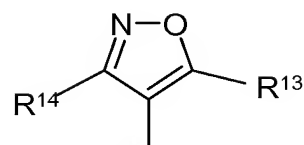
(c)



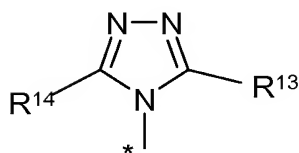
(d)



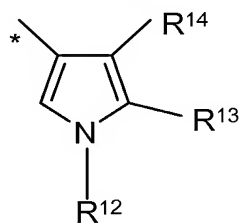
(e)



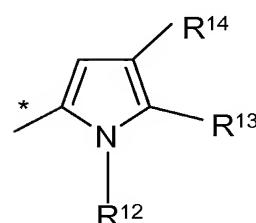
(f)



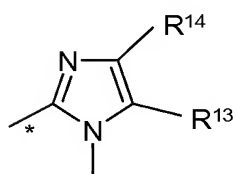
(g)



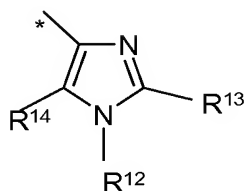
(h)



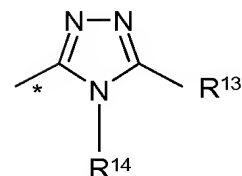
(i)



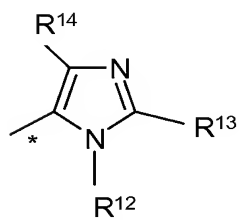
(j)



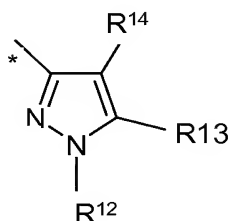
(k)



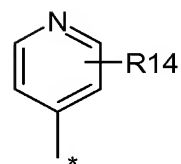
(l)



(m)

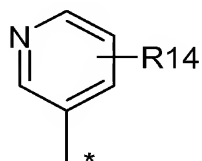


(n)

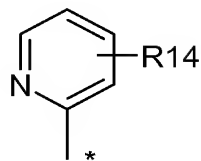


(o)

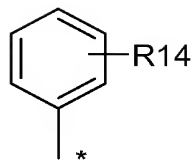
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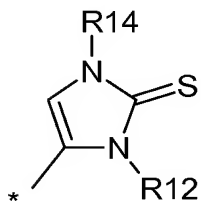
(p)



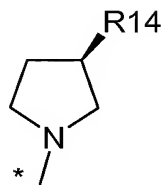
(q)



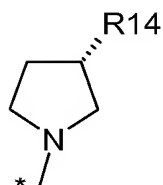
(r)



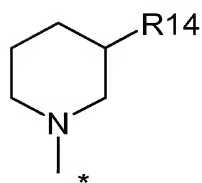
(s)



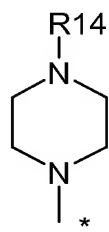
(t)



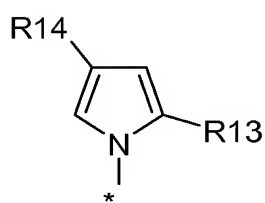
(u)



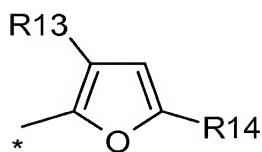
(v)



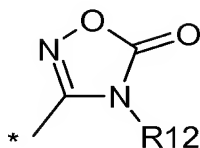
(w)



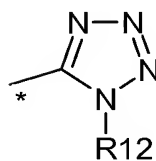
(x)



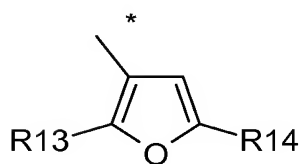
(y)



(z)



(aa)



(ab)

wherein * is the location wherein R^4 is attached to the ring system and wherein wherein R^{12} , R^{13} and R^{14} are each independently represented by H, Het, C_{1-6} alkyl, -CN, - NR^aR^a , -nitro, $-C(=O)R^a$, $-C(=O)NR^aR^a$, $-C(=O)NR^aS(=O)_2R^a$, $-C(=O)NR^a$ -Het, -

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$C(=O)NR^aNR^aR^a$, $-C(=O)NR^a(R^bNR^aR^a)$, $-C(=O)NR^a(R^bOR^a)$, $-C(=O)NR^a(R^bS(=O)_2R^a)$, $-C(=O)NR^aR^bHet$, $-C(=O)NR^aOR^a$, $-C(=O)R^bNR^aR^a$, $-C(=NOR^a)R^a$, $-C(=NCN)R^a$, $-C(=O)OR^a$, $-C(=O)OR^bNR^aR^a$, $-C(=O)R^a$, $-OC(=O)R^a$, $-C(=O)R^a-SR^a$, $=S$, $-NR^aC(=O)R^a$, $-NR^aC(=O)OR^a$, $-NR^aS(=O)_2R^b$, $-C(=NOR^a)R^a$, $-S(=O)_2R^a$, $-S(=O)_2NR^aR^a$, $-S(=O)_2NR^a(R^bC(=O)NR^aR^a)$, or $-S(=O)_2NR^a(R^bC(=O)OR^a)$.

8. (Original) A compound as recited in Claim 1 wherein:

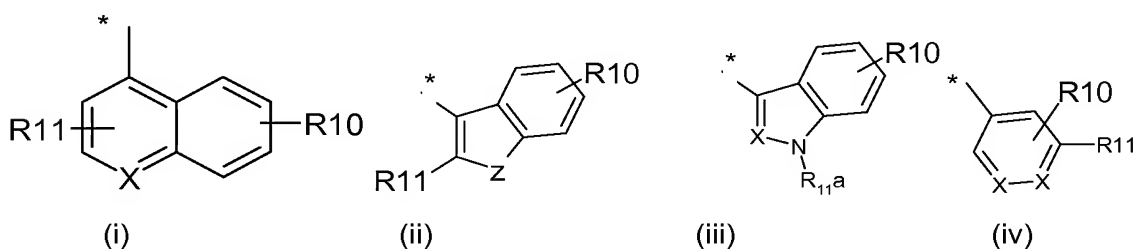
A is N or CR^{20} wherein R^{20} is H, halogen, cyano, C_{1-6} alkyl, C_{1-6} alkenyl, C_{1-6} alkynyl, $-OC_{0-4}$ alkyl, $-N(C_{0-4}alkyl)(C_{0-4}alkyl)$;

R^I is H, halogen, cyano, nitro, C_{1-6} alkyl, C_{1-6} alkenyl, C_{1-6} alkynyl, $S(=O)_n C_{1-4}$ alkyl, $-S(=O)_n N(C_{1-4}alkyl)_n$, $-OC_{0-4}alkyl$, $-N(C_{0-4}alkyl)(C_{0-4}alkyl)$, $-C(=O)OC_{1-4}alkyl$, $-C(=O)C_{0-4}alkyl$, or $-C(=O)N(C_{0-4}alkyl)(C_{0-4}alkyl)$ where n is 0, 1 or 2;

R^{II} is H, halogen, cyano, nitro, C_{1-6} alkyl, C_{1-6} alkenyl, C_{1-6} alkynyl, $S(=O)_n C_{1-4}$ alkyl, $-S(=O)_n N(C_{1-4}alkyl)_n$, $-OC_{0-4}alkyl$, $-N(C_{0-4}alkyl)(C_{0-4}alkyl)$, $-C(=O)OC_{1-4}alkyl$, $-C(=O)C_{0-4}alkyl$, or $-C(=O)N(C_{0-4}alkyl)(C_{0-4}alkyl)$ where n is 0, 1 or 2;

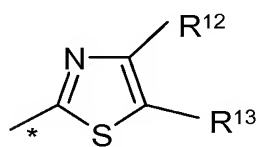
R^2 is $-CH_2CH_2CH_3$, $-CH_2$ -cyclopropyl, $-CH_2CH(CH_3)_2$, $-CH_2CH_2CH_2F$, $-CH_2$ -cyclobutyl, $-CH_2C(CH_3)_3$, $-CH_2CH_2CH(CH_3)_2$, $-CH_2CF_3$, $-CH_2$ -methylphenyl, $-CH_2$ -phenol, $-CH_2$ -(3,5-dimethylisoxazol-4-yl), $-CH_2$ -S-phenyl, $-CH_2$ -phenylcarboxyl, or $-CH_2SCF_3$;

R^3 is selected from formulas (i), (ii), (iii) or (iv) set forth below:

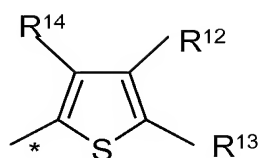


wherein * is the location where (i) or (ii) or (iii) or (iv) is attached to structural formula (II), and X is C or N; and Z is O or S, wherein R^{10} is at any position on the ring and R^{10} and R^{11} are independently at each instance H, R^a , halogen, $-CN$, nitro, OR^a , CF_3 , $-NR^aR^a$, $-C(=O)OR^a$, $-C(=O)R^a$, $-C(=O)NR^aR^a$, $-OC(=O)C_{1-4}alkyl$, $-NR^aC(=O)C_{1-4}alkyl$ or $-S(=O)_nR^c$; and wherein R^{11a} is R^a , $-S(=O)_2NR^aR^a$ or $-S(=O)_nR^c$ and n=1 or 2;

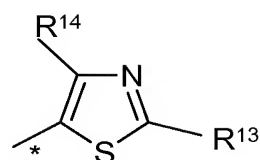
R^4 is selected from formulas (a) to (z) or (aa) or (ab) set forth below:



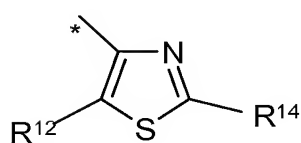
(a)



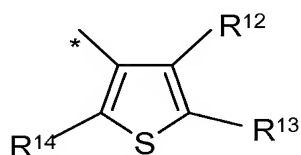
(b)



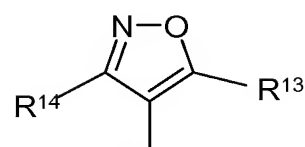
(c)



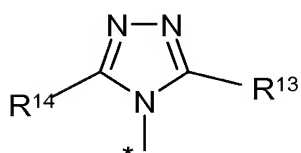
(d)



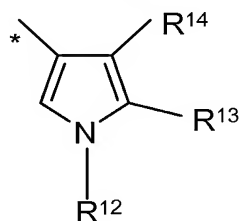
(e)



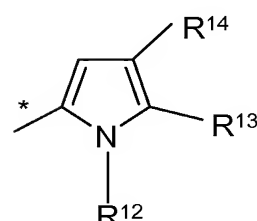
(f)



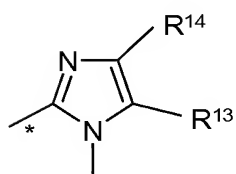
(g)



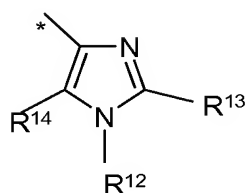
(h)



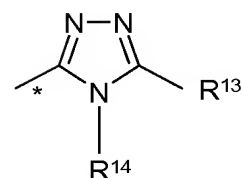
(i)



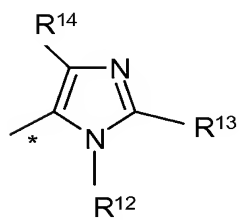
(j)



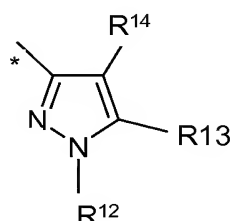
(k)



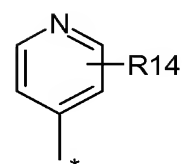
(l)



(m)

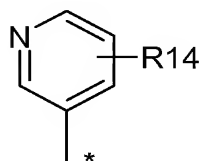


(n)

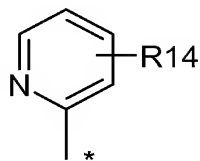


(o)

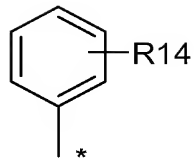
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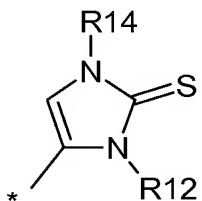
(p)



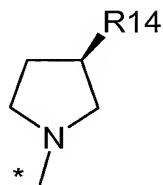
(q)



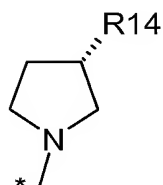
(r)



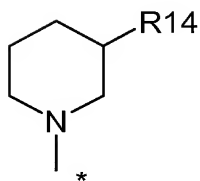
(s)



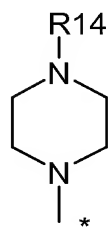
(t)



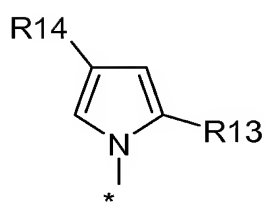
(u)



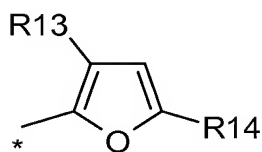
(v)



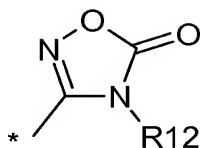
(w)



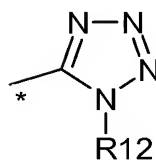
(x)



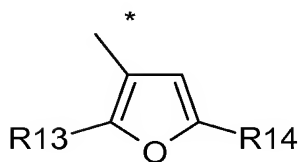
(y)



(z)



(aa)



(ab)

wherein * is the location wherein R^4 is attached to the ring system and wherein wherein R^{12} , R^{13} and R^{14} are each independently represented by H, Het, C_{1-6} alkyl, -CN, - NR^aR^a , -nitro, - $C(=O)R^a$, - $C(=O)NR^aR^a$, - $C(=O)NR^aS(=O)_2R^a$, - $C(=O)NR^a$ -Het, -

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$C(=O)NR^aNR^aR^a$, $-C(=O)NR^a(R^bNR^aR^a)$, $-C(=O)NR^a(R^bOR^a)$, $-C(=O)NR^a(R^bS(=O)_2R^a)$, $-C(=O)NR^aR^bHet$, $-C(=O)NR^aOR^a$, $-C(=O)R^bNR^aR^a$, $-C(=NOR^a)R^a$, $-C(=NCN)R^a$, $-C(=O)OR^a$, $-C(=O)OR^bNR^aR^a$, $-C(=O)R^a$, $-OC(=O)R^a$, $-C(=O)R^a-SR^a$, $=S$, $-NR^aC(=O)R^a$, $-NR^aC(=O)OR^a$, $-NR^aS(=O)_2R^b$, $-C(=NOR^a)R^a$, $-S(=O)_2R^a$, $-S(=O)_2NR^aR^a$, $-S(=O)_2NR^a(R^bC(=O)NR^aR^a)$, or $-S(=O)_2NR^a(R^bC(=O)OR^a)$.

9. (Previously presented) A compound of claim 1 selected from:

5-[8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-5-oxo-6,8-dihydro-5H-pyrazolo[4,3-e][1,2,4]triazolo[4,3-c]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile;

5-[8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-3-methyl-5-oxo-6,8-dihydro-5H-pyrazolo[4,3-e][1,2,4]triazolo[4,3-c]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile;

5-[8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-3-(dimethylamino)-5-oxo-6,8-dihydro-5H-pyrazolo[4,3-e][1,2,4]triazolo[4,3-c]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile;

5-[3-amino-8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-5-oxo-6,8-dihydro-5H-pyrazolo[4,3-e][1,2,4]triazolo[4,3-c]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile;

5-[8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-5-oxo-6,8-dihydro-5H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile;

5-[8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-3-methyl-5-oxo-6,8-dihydro-5H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile;

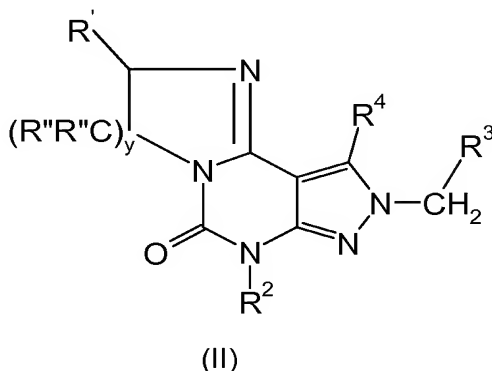
8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-9-(1-methyl-1H-imidazol-5-yl)-6,8-dihydro-5H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-5-one;

8-{[5-chloro-1-(methylsulfonyl)-1H-indol-3-yl]methyl}-6-(cyclopropylmethyl)-9-(1-methyl-1H-imidazol-5-yl)-6,8-dihydro-5H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-5-one;

8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-9-[1-methyl-4-(methylsulfonyl)-1H-pyrrol-2-yl]-6,8-dihydro-5H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-5-one;

5-[8-{[5-chloro-1-(methylsulfonyl)-1H-indol-3-yl]methyl}-6-(cyclopropylmethyl)-5-oxo-6,8-dihydro-5H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile.

10. (Currently amended) A compound having the structural formula (II):



wherein,

R' is H, ~~optionally-substituted alkyl, optionally-substituted alkenyl, optionally substituted alkynyl;~~

R'' is independently at each instance H, ~~optionally-substituted alkyl, optionally substituted alkenyl, optionally-substituted alkynyl;~~

y is 1 or 2;

R² is H, ~~optionally-substituted alkyl, wherein said alkyl is optionally substituted with 0, 1, 2 or 3 substituents selected from heterocycle, S(=O)_nR^c, -S(=O)_nNR^aR^a halogen, -CN, -OR^a, -NR^aR^a, -C(=O)OR^a, -C(=O)R^a, -C(=O)NR^aR^a, -OC(=O)C₁₋₄alkyl, or -NR^aC(=O)C₁₋₄alkyl, optionally-substituted alkylcycloalkyl, wherein said alkylcycloalkyl is optionally substituted with 0, 1, 2 or 3 substituents selected from heterocycle, S(=O)_nR^c, -S(=O)_nNR^aR^a halogen, -CN, -OR^a, -NR^aR^a, -C(=O)OR^a, -C(=O)R^a, -C(=O)NR^aR^a, -OC(=O)C₁₋₄alkyl, or -NR^aC(=O)C₁₋₄alkyl, optionally-substituted alkenyl, optionally-substituted alkynyl, optionally-substituted cycloalkyl, optionally-substituted cycloalkenyl, optionally substituted cycloalkynyl, optionally-substituted aryl, optionally-substituted alkoxy, optionally substituted amino, or optionally-substituted heterocycle;~~

R³ is a monocyclic or bicyclic, saturated or unsaturated, ring system comprising 0, 1, 2 or 3 heteroatoms independently selected from N, O, or S, the ring being substituted by 0, 1, 2 or 3 substituents selected from =O, halogen, -OR^a, C₁₋₆alkyl, C₁₋₆haloalkyl, -CN, nitro, -S(=O)_nR^c, -O(CH₂)_mHet, -O(CH₂)_mC(=O)Het, -O(CH₂)_mC(=O)NR^aR^a, -O(CH₂)_mC(=O)OR^a, -O(CH₂)_mNR^aR^a, -O(CH₂)_mOR^a, -S(CH₂)_mHet, -S(CH₂)_mC(=O)Het, -S(CH₂)_mC(=O)NR^aR^a, -S(CH₂)_mC(=O)OR^a, -S(CH₂)_mNR^aR^a, -S(CH₂)_mOR^a, -NR^aR^a, -NHC(=O)R^a, N=NR^a, aminocarbonyl, phenyl, benzyl; or R³ is represented by -Het, -Het-Het, R⁵, -R⁵-Het, -Het-R⁵, -Het-O-R⁵, -R⁵-R⁵, -R⁵-OR⁵;

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R^4 is a monocyclic or bicyclic, saturated or unsaturated, ring system, or a vicinal-fused derivative thereof, which may contain from 5 to 12, preferably 5 to 10, ring atoms, 0, 1, 2, 3 or 4 of which are heteroatoms independently selected from N, O, or S, the ring system being substituted by 0, 1, 2 or 3 substituents selected from $B(OH)_2$, vicinal $-OCH_2CH_2O-$, vicinal $-OC_{1-6}haloalkylO-$, vicinal $-OCH_2O-$, vicinal $-CH_2OCH_2O-$, $=O$, halogen, $-R^bOR^a$, $-SR^a$, $-OR^a$, $C_{1-6}alkyl$, $C_{1-6}haloalkyl$, $-CN$, $-S(=O)_nR^c$, $-O(CH_2)_mHet$, $-O(CH_2)_mC(=O)Het$, $-O(CH_2)_mC(=O)NR^aR^a$, $-O(CH_2)_mC(=O)OR^a$, $-O(CH_2)_mNR^aR^a$, $-O(CH_2)_mOR^a$, $-S(CH_2)_mHet$, $-S(CH_2)_mC(=O)Het$, $-S(CH_2)_mC(=O)NR^aR^a$, $-S(CH_2)_mC(=O)OR^a$, $-S(CH_2)_mNR^aR^a$, $-S(CH_2)_mOR^a$, $-NR^aR^a$, $-NHC(=O)R^a$, $-NHC(=O)OR^a$, $N=NR^a$, NO_2 , $-C(=O)NR^aR^a$, $-C(=O)NR^aOR^a$, $-C(=O)NR^a(R^bNR^aR^a)$, $-C(=O)NR^a(R^bOR^a)$, $-C(=O)NR^a(R^bS(=O)_nR^a)$, $-C(=O)NR^a(R^bHet)$, $-C(=O)OR^a$, $-OC(=O)R^a$, $-C(=O)OR^bNR^aR^a$, $-C(=O)R^a$, $-C(=O)R^bNR^aR^a$, $-C(=NOR^a)R^a$, $-C(=NCN)R^a$, $-S(=O)_2NR^aR^a$, $-NR^aS(=O)_2R^a$, $-S(=O)_2NR^a(R^bC(=O)NR^aR^a)$, $-S(=O)_2NR^a(R^bC(=O)OR^a)$, aminocarbonyl, phenyl, benzyl; or R^4 is represented by $-(CH_2)_nR^5$, $-(CH_2)_nR^d$, $-Het$, $-Het-Het$, R^5 , $-R^5-Het$, $-Het-R^5$, $-Het-OR^5$, R^5-R^5 , or $-R^5-OR^5$; or R^4 is represented by $C_{1-6}alkyl$, $-NC_{1-6}alkyl$, or $-N(C_{1-6}alkyl)_2$ wherein the $C_{1-6}alkyl$, $-NC_{1-6}alkyl$, $-N(C_{1-6}alkyl)$ are substituted by 0, 1 or 2 substituents selected from R^a , OR^a , halogen or phenyl wherein R^4 is not $-(CH_2)_zCH_3$, $-(CH_2)_zCH_2OH$, $-(CH_2)_zCO_2H$, or $-(CH_2)_zCO_2C_{1-6}alkyl$ wherein z is 1,2,3,4,5, or 6;

R^5 is independently at each instance, phenyl substituted by 0, 1, 2, or 3 groups selected from halogen, $C_{1-6}haloalkyl$, $-OC_{1-6}haloalkyl$, $C_{1-6}alkyl$, $-CN$, nitro, $-OR^a$, $-S(=O)_nR^c$, $-O(CH_2)_mHet$, $-O(CH_2)_mC(=O)Het$, $-O(CH_2)_mC(=O)NR^aR^a$, $-O(CH_2)_mC(=O)OR^a$, $-O(CH_2)_mNR^aR^a$, $-O(CH_2)_mOR^a$, $-S(CH_2)_mHet$, $-S(CH_2)_mC(=O)Het$, $-S(CH_2)_mC(=O)NR^aR^a$, $-S(CH_2)_mC(=O)OR^a$, $-S(CH_2)_mNR^aR^a$, $-S(CH_2)_mOR^a$, $-R^bOR^a$, $-SR^a$, $-C(=O)NR^aR^a$, $-C(=O)NR^aOR^a$, $-C(=O)NR^aR^bNR^aR^a$, $-C(=O)NR^aR^bOR^a$, $-C(=O)NR^aR^bS(=O)_nR^a$, $-C(=O)NR^aR^bHet$, $-C(=O)OR^a$, $-OC(=O)R^a$, $-C(=O)OR^bNR^aR^a$, $-C(=O)R^a$, $-C(=O)R^bNR^aR^a$, $-C(=NOR^a)R^a$, $-C(=NCN)R^a$, $-S(=O)_2NR^aR^a$, $-NR^aS(=O)_2R^a$, $-S(=O)_2NR^aR^bC(=O)NR^aR^a$, or $-S(=O)_2NR^aR^bC(=O)OR^a$;

R^a is, independently at each instance, H, $C_{1-6}alkyl$, $-C(=O)C_{1-4}alkyl$, $C_{1-4}haloalkyl$, phenyl, benzyl, or 5 or 6-membered ring, saturated or unsaturated heterocycle containing 1,2,3, or 4 heteroatoms independently selected from N, O or S;

R^b is, independently at each instance, $C_{1-6}alkyl$, $-C(=O)C_{1-4}alkyl$, $C_{1-4}haloalkyl$, phenyl, benzyl, or 5 or 6-membered ring, saturated or unsaturated heterocycle containing 1,2,3, or 4 heteroatoms independently selected from N, O or S;

R^c is $C_{1-6}alkyl$, $C_{1-4}haloalkyl$, phenyl or benzyl;

R^d is phenyl substituted by 0, 1 or 2 groups selected from $-CN$, halogen, nitro, $C_{1-6}alkyl$, $C_{1-4}haloalkyl$, $-OH$, $-OR^c$, $-NR^aR^a$, $-S(=O)_nR^c$, $-C(=O)NR^aR^a$, $-C(=O)OR^a$,

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-NR^aC(=O)R^a, -OC(=O)R^a, B(OH)₂, vicinyl -OCH₂CH₂O-, vicinyl -OC₁₋₂haloalkylO-, vicinyl -OCH₂O-, vicinyl -CH₂OCH₂O-, phenyl, benzyl and a 5- or 6-membered ring, saturated or unsaturated heterocycle containing 1, 2, 3 or 4 heteroatoms independently selected from N, O, or S;

m is 1, 2 or 3;

n is 0, 1 or 2;

or a pharmaceutically acceptable salt thereof.

11. (Original) A compound as recited in Claim 10 wherein:

R' is H, C₁₋₆alkyl, C₁₋₆alkenyl, C₁₋₆alkynyl.

12. (Original) A compound as recited in Claim 10 wherein:

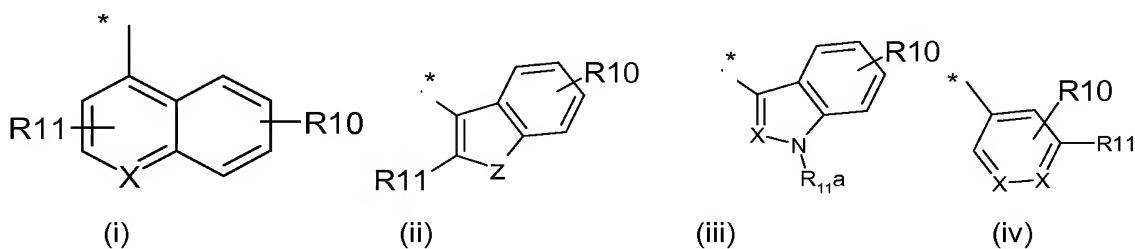
R'' is independently at each instance H, C₁₋₆alkyl, C₁₋₆alkenyl, C₁₋₆alkynyl.

13. (Cancelled) A compound as recited in Claim 10 wherein:

R² is C₁₋₆alkylC₃₋₆cycloalkyl or -C₁₋₁₂alkyl wherein either is optionally substituted with 0, 1, 2 or 3 substituents selected from Het, S(=O)_nR^c, -S(=O)_nNR^aR^a halogen, -CN, -OR^a, -NR^aR^a, -C(=O)OR^a, -C(=O)R^a, -C(=O)NR^aR^a, -OC(=O)C₁₋₄alkyl, or -NR^aC(=O)C₁₋₄alkyl and n is 0, 1 or 2.

14. (Original) A compound as recited in Claim 10 wherein:

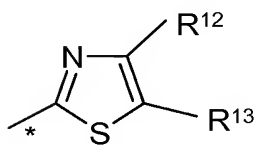
R³ is selected from formulas (i), (ii), (iii) or (iv) set forth below:



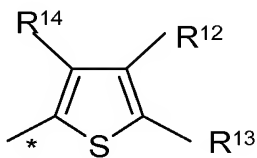
wherein * is the location where (i) or (ii) or (iii) or (iv) is attached to structural formula (I), and X is C or N; and Z is O or S, wherein R¹⁰ is at any position on the ring and R¹⁰ and R¹¹ are independently at each instance H, R^a, halogen, -CN, nitro, OR^a, CF₃, -NR^aR^a, -C(=O)OR^a, -C(=O)R^a, -C(=O)NR^aR^a, -OC(=O)C₁₋₄alkyl, -NR^aC(=O)C₁₋₄alkyl or -S(=O)_nR^c; and wherein R^{11a} is R^a, -S(=O)₂NR^aR^a or -S(=O)_nR^c and n=1 or 2.

15. (Original) A compound as recited in Claim 10 wherein:

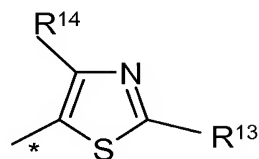
R⁴ is selected from formulas (a) to (z) or (aa) or (ab) set forth below:



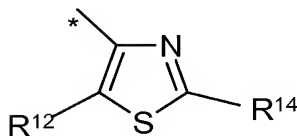
(a)



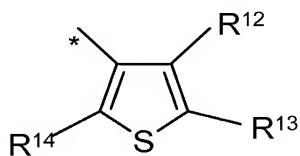
(b)



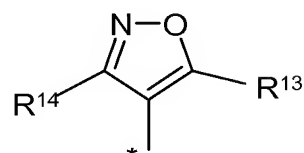
(c)



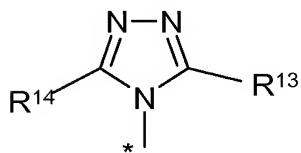
(d)



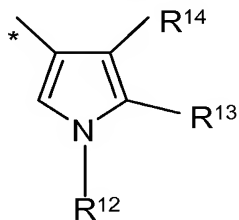
(e)



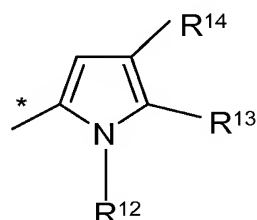
(f)



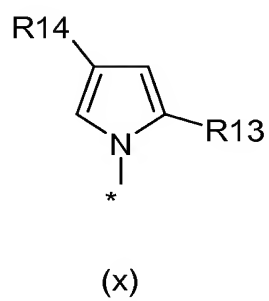
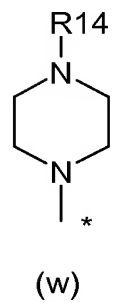
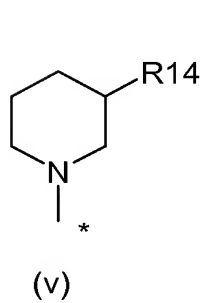
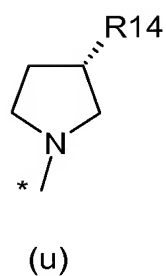
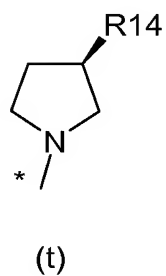
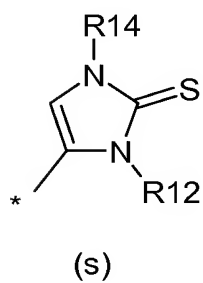
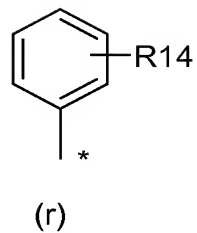
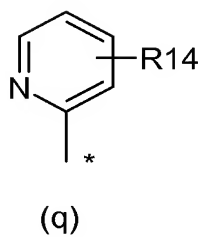
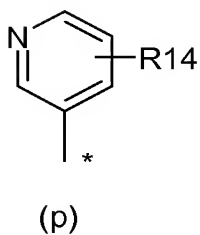
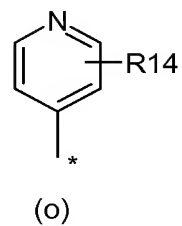
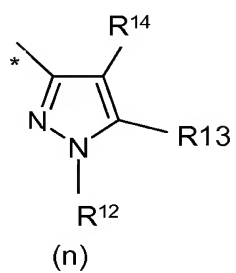
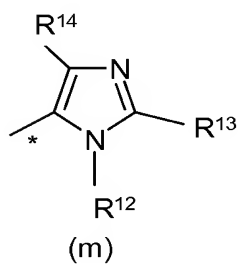
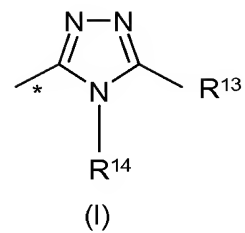
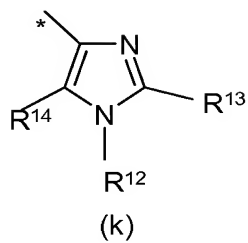
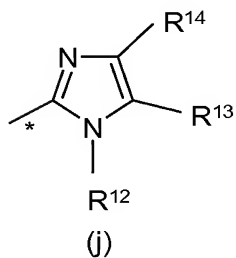
(g)

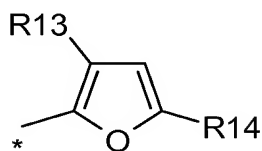


(h)

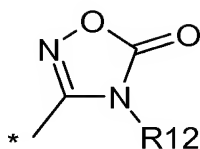


(i)

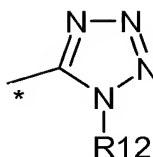




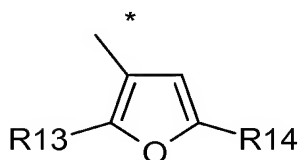
(y)



(z)



(aa)



(ab)

wherein * is the location wherein R^4 is attached to the ring system and wherein wherein R^{12} , R^{13} and R^{14} are each independently represented by H, Het, C_{1-6} alkyl, -CN, - NR^aR^a , -nitro, - $C(=O)R^a$, - $C(=O)NR^aR^a$, - $C(=O)NR^aS(=O)_2R^a$, - $C(=O)NR^a$ -Het, - $C(=O)NR^aNR^aR^a$, - $C(=O)NR^a(R^bNR^aR^a)$, - $C(=O)NR^a(R^bOR^a)$, - $C(=O)NR^a(R^bS(=O)_2R^a)$, - $C(=O)NR^aR^b$ Het, - $C(=O)NR^aOR^a$, - $C(=O)R^bNR^aR^a$, - $C(=NOR^a)R^a$, - $C(=NCN)R^a$, - $C(=O)OR^a$, - $C(=O)OR^bNR^aR^a$, - $C(=O)R^a$, - $OC(=O)R^a$, - $C(=O)R^a-SR^a$, =S, - $NR^aC(=O)R^a$, - $NR^aC(=O)OR^a$, - $NR^aS(=O)_2R^b$, - $C(=NOR^a)R^a$, - $S(=O)_2R^a$, - $S(=O)_2NR^aR^a$, - $S(=O)_2NR^a(R^bC(=O)NR^aR^a)$, or - $S(=O)_2NR^a(R^bC(=O)OR^a)$.

16. (Original) A compound as recited in Claim 10 wherein:

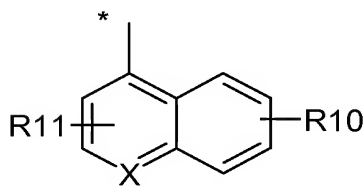
R' is H, C_{1-6} alkyl, C_{1-6} alkenyl, C_{1-6} alkynyl;

R'' is independently at each instance H, C_{1-6} alkyl, C_{1-6} alkenyl, C_{1-6} alkynyl;

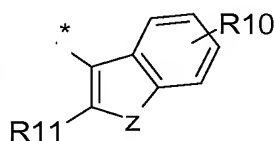
y is 1;

R^2 is - $CH_2CH_2CH_3$, - CH_2 -cyclopropyl, - $CH_2CH(CH_3)_2$, - $CH_2CH_2CH_2F$, - CH_2 -cyclobutyl, - $CH_2C(CH_3)_3$, - $CH_2CH_2CH(CH_3)_2$, - CH_2CF_3 , - CH_2 -methylphenyl, - CH_2 -phenol, - CH_2 -(3,5-dimethylisoxazol-4-yl), - CH_2 -S-phenyl, - CH_2 -phenylcarboxyl, or - CH_2SCF_3 ;

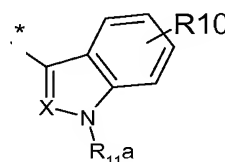
R^3 is selected from formulas (i), (ii), (iii) or (iv) set forth below:



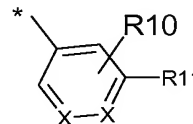
(i)



(ii)



(iii)

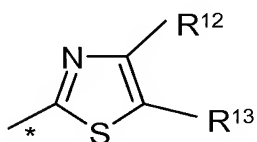


(iv)

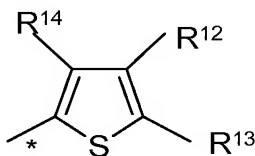
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 Amendment Dated: 04/23/2007

wherein * is the location where (i) or (ii) or (iii) or (iv) is attached to structural formula (I), and X is C or N; and Z is O or S, wherein R^{10} is at any position on the ring and R^{10} and R^{11} are independently at each instance H, R^a , halogen, -CN, nitro, OR^a , CF_3 , $-NR^aR^a$, $-C(=O)OR^a$, $-C(=O)R^a$, $-C(=O)NR^aR^a$, $-OC(=O)C_{1-4}alkyl$, $-NR^aC(=O)C_{1-4}alkyl$ or $-S(=O)_nR^c$; and wherein R^{11a} is R^a , $-S(=O)_2NR^aR^a$ or $-S(=O)_nR^c$ and $n=1$ or 2 ;

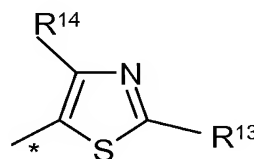
R^4 is selected from formulas (a) to (z) or (aa) or (ab) set forth below:



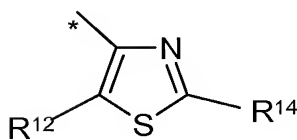
(a)



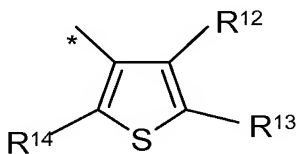
(b)



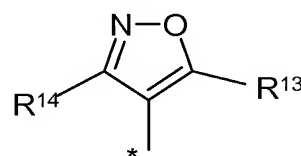
(c)



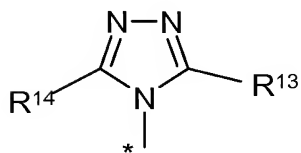
(d)



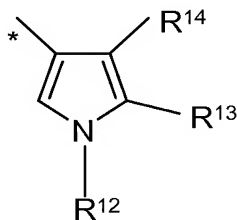
(e)



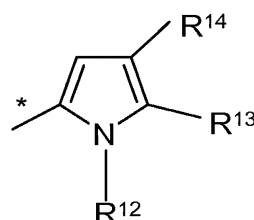
(f)



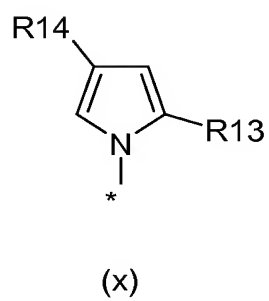
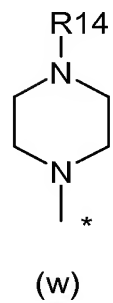
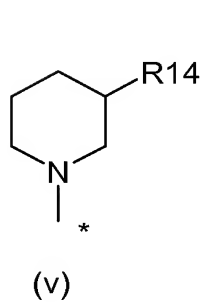
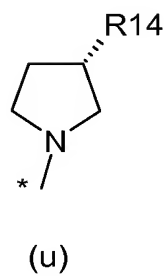
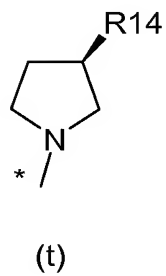
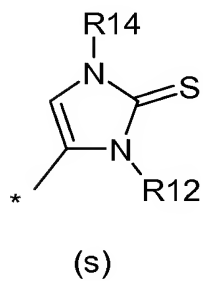
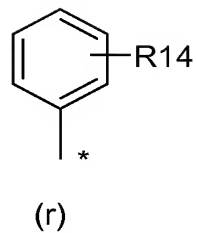
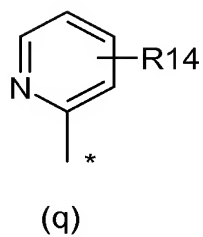
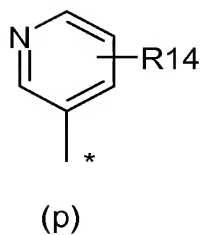
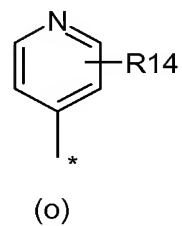
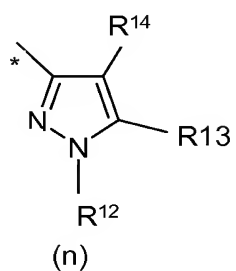
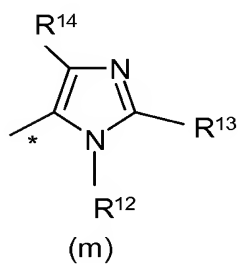
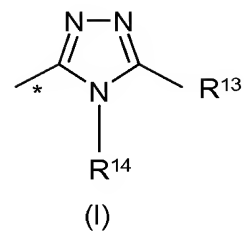
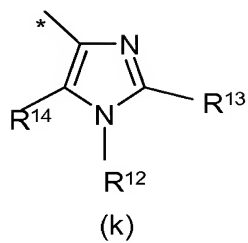
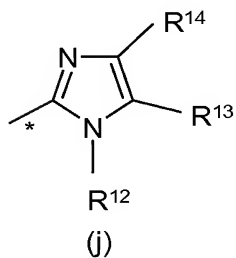
(g)

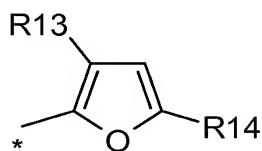


(h)

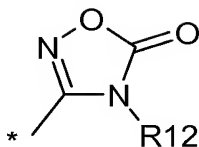


(i)

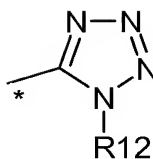




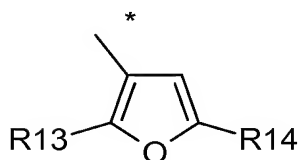
(y)



(z)



(aa)



(ab)

wherein * is the location wherein R^4 is attached to the ring system and wherein wherein R^{12} , R^{13} and R^{14} are each independently represented by H, Het, C_{1-6} alkyl, -CN, - NR^aR^a , -nitro, - $C(=O)R^a$, - $C(=O)NR^aR^a$, - $C(=O)NR^aS(=O)_2R^a$, - $C(=O)NR^a$ -Het, - $C(=O)NR^aNR^aR^a$, - $C(=O)NR^a(R^bNR^aR^a)$, - $C(=O)NR^a(R^bOR^a)$, - $C(=O)NR^a(R^bS(=O)_2R^a)$, - $C(=O)NR^aR^b$ Het, - $C(=O)NR^aOR^a$, - $C(=O)R^bNR^aR^a$, - $C(=NOR^a)R^a$, - $C(=NCN)R^a$, - $C(=O)OR^a$, - $C(=O)OR^bNR^aR^a$, - $C(=O)R^a$, - $OC(=O)R^a$, - $C(=O)R^a-SR^a$, =S, - $NR^aC(=O)R^a$, - $NR^aC(=O)OR^a$, - $NR^aS(=O)_2R^b$, - $C(=NOR^a)R^a$, - $S(=O)_2R^a$, - $S(=O)_2NR^aR^a$, - $S(=O)_2NR^a(R^bC(=O)NR^aR^a)$, or - $S(=O)_2NR^a(R^bC(=O)OR^a)$.

17. (Previously presented) A compound of claim 1 selected from:

5-{8-[(6-chloroquinolin-4-yl)methyl]-6-isobutyl-5-oxo-2,5,6,8-tetrahydro-3H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-9-yl}-1-methyl-1H-pyrrole-3-carbonitrile; 5-{8-[(6-chloroquinolin-4-yl)methyl]-6-isobutyl-5-oxo-2,5,6,8-tetrahydro-3H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-9-yl}-1-methyl-1H-pyrrole-3-carbonitrile;

5-[8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-3-methyl-5-oxo-2,5,6,8-tetrahydro-3H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile;

5-[8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-2-methyl-5-oxo-2,5,6,8-tetrahydro-3H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile;

5-[(3R)-8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-3-methyl-5-oxo-2,5,6,8-tetrahydro-3H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile;

5-[(3S)-8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-3-methyl-5-oxo-2,5,6,8-tetrahydro-3H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile;

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5-[9-[(6-chloroquinolin-4-yl)methyl]-7-(cyclopropylmethyl)-6-oxo-2,3,4,6,7,9-hexahydropyrazolo[4,3-e]pyrimido[1,2-c]pyrimidin-10-yl]-1-methyl-1*H*-pyrrole-3-carbonitrile.

18. (Cancelled).

19. (Cancelled).

20. (Previously presented) A method for the treatment of infections associated with *H. pylori* comprising administering to a host in need of such treatment a therapeutically effective amount of a compound as defined in claim 1.

21. (Previously presented) A method for the prophylaxis treatment of infections associated with *H. pylori* comprising administering to a host in need of such treatment a therapeutically effective amount of a compound as defined in claim 1.

22. (Previously presented) A method for the treatment or prophylaxis of *H. pylori* infection comprising administering a therapeutically effective amount of a compound as defined in claim 1 or a pharmaceutically acceptable salt thereof.

23. (Previously presented) A pharmaceutical composition comprising a compound as defined in claim 1 together with at least one pharmaceutically acceptable carrier, diluent or excipient.